undergoing orchiectomy, consideration should be given to sperm extraction from the orchiectomy specimen, with cryopreservation of the extracted sperm. Although procedures such as intrauterine insemination can be performed if there are at least 5×10^6 motile sperm available for insemination, this procedure might not work, and the time might come when IVF with ICSI is the only alternative, despite the excellent sperm count after therapy. ■

Kidney Stones

Diabetes Mellitus and Kidney Stone Formation

Reviewed by Dean G. Assimos, MD

Department of Urology, Wake Forest University School of Medicine, Winston-Salem, NC

[*Rev Urol*. 2006;8(1):44]

Kidney stone formation is a multifactorial process that is associated with other disease processes. Insulin resistance plays a key role in type 2 diabetes mellitus (DM), and it has been linked to uric acid stone formation.[1,2] Insulin resistance might result in a deficit in ammonium production in the kidney, which lowers urinary pH, thus generating a favorable milieu for uric acid stone formation.

Diabetes Mellitus and the Risk of Nephrolithiasis

Taylor EN, Stampfer MJ, Curhan GC.

Kidney Int. 2005;68:1230-1235.

Taylor and colleagues searched for a prospective association between DM and kidney stone formation by conducting a cross-sectional study of 3 large cohorts: Nurses' Health Study I (older women), Nurses' Health Study II (younger women), and the Health Professional Follow-up Study (men). At baseline, the multivariate relative risk of stone prevalence in those with DM was significant for all 3 cohorts. The prospective development of an incident kidney stone event was significantly greater in both female cohorts with DM but not in the male group. In addition, the multivariate risk of incident DM was significant in subjects with a history of kidney stones for all 3 cohorts.

These findings again demonstrate that stone formation might be linked to common systemic diseases.

These findings again demonstrate that stone formation might be linked to common systemic diseases. Similar associations have been previously demonstrated with hypertension.[3,4] ■

References

1. Pak CY, Sakhaee K, Moe O, et al. Biochemical profile of stone-forming patients with diabetes mellitus. *Urology*. 2003;61:523-527.
2. Abate N, Chandalia M, Cabo-Chan AV Jr, et al. The metabolic syndrome and uric acid nephrolithiasis: novel features of renal manifestation of insulin resistance. *Kidney Int*. 2004;65:386-392.
3. Strazzullo P, Barba G, Vuotto P, et al. Past history of nephrolithiasis and incidence of hypertension in men: a reappraisal based on the results of the Olivetti prospective heart study. *Nephrol Dial Transplant*. 2001;16:2232-2235.
4. Borghi L, Meschi T, Guerra A, et al. Essential arterial hypertension and stone disease. *Kidney Int*. 1999;55:2397-2406.

Outcomes Research

Lower Urinary Tract Symptoms, Erectile Dysfunction, and Hypogonadism

Reviewed by Michael P. O'Leary, MD, MPH

Department of Surgery, Harvard Medical School; Division of Urology, Brigham and Women's Hospital, Boston, MA

[*Rev Urol*. 2006;8(1):44-45]

Correlation Between LUTS (AUA-SS) and Erectile Dysfunction (SHIM) in an Age-Matched Racially Diverse Male Population: Data from the Prostate Cancer Awareness Week (PCAW)

Barqawi A, O'Donnell C, Kumar R, et al.

J Impot Res. 2005;17:370-374.

Prostate Cancer Awareness Week offers free or low-cost screening to men at hundreds of sites across the United States. In this report, an analysis of 6641 of these men included data on lower urinary tract symptoms

(LUTS) according to the American Urological Association Symptom Score (AUA-SS) and erectile function according to the Sexual Health Inventory for Men (SHIM).

This racially diverse population (17% African American) was assessed for hypertension, hypercholesterolemia, ischemic heart disease, and diabetes. Smoking status was recorded, and serum testosterone was measured in approximately half of the population studied. The mean AUA-SS was 5.7 (mild LUTS). The mean SHIM score was 16.3 (20 is considered "normal").

Seventy-five percent of the men studied had SHIM scores less than 21. As several other studies have now shown, the higher the AUA-SS, the lower the SHIM score. White men had higher SHIM scores than African-American men after adjusting for age, comorbidities, and smoking status. Not surprisingly, smoking and comorbidities were strong predictors of low SHIM scores.

In the subgroup of men who had serum available to measure total testosterone (2928 of 6641), hypogonadism was defined as serum testosterone less than 300 ng/dL and was not a significant risk factor for poor sexual health after adjusting for other variables.

Why do African-American men report more erectile dysfunction than white men? Is race really a risk factor? The answer is unclear, and as these investigators note, deserves future investigation.

This is one more study that corroborates the link between LUTS and erectile dysfunction. Is there a common pathophysiology—sympathetic overactivity perhaps—or are these simply two common symptoms of the aging male?

Finally, this study provides more proof that serum testosterone has less impact on erectile function in older men than we might have generally believed.

Normal, Bound and Nonbound Testosterone Levels in Normally Aging Men: Results from the Massachusetts Male Aging Study

Mohr BA, Guay AT, O'Donnell AB, McKinlay JB.

Clin Endocrinol (Oxf). 2005;62:64-73.

The Massachusetts Male Aging Study is one of the best known and most frequently cited epidemiologic studies in urology. A population-based, observational study of men aged 40 to 70 years, it began in 1987 and is the basis for the frequently quoted statistic of 28 million American men having erectile dysfunction.[1] Community-dwelling men from 11 cities and towns in the greater Boston area participated in extensive in-home interviewing and had early-morning blood sampled. A total of more than 1600 men participated. Those without chronic illnesses, taking no medications thought to affect hormone levels, nonsmoking, and with a body mass index less than 29 kg/m^2 were considered "healthy." Free, total, and bioavailable testosterone were measured. On the basis of multiple samplings at varying time intervals, 95% of healthy men in their 40s, 50s, 60s, and 70s would be expected to have total testosterone in the range (2.5–97.5 percentile) of 251–914, 216–876, 196–859, and 156–818 ng/dL, respectively.

Table 1
Threshold Testosterone (T) Levels Defining Abnormally Low T, by Age, According to the Massachusetts Male Aging Study

Age (y)	Threshold T Level (ng/dL)
40–49	251
50–59	216
60–69	196
70–79	156

Therefore if the lowest percentile (2.5) were used as a cutoff value, abnormally low testosterone values would be as listed in Table 1.

This study is bound to create controversy, particularly in an age of aggressive marketing of hormone replacement in aging men. Others studies have defined "hypogonadism" as serum testosterone levels of less than 325 ng/dL.[2] ■

References

1. Feldman HA, Goldstein I, Hatzichristou DG, et al. Impotence and its medical and psychological correlates: results of the Massachusetts Male Aging Study. *J Urol.* 1994;151:54-61.
2. Harman SM, Metter EJ, Tobin JD, et al. Longitudinal effects of aging on serum total and free testosterone levels in healthy men. Baltimore Longitudinal Study of Aging. *J Clin Endocrinol Metab.* 2001;86:724-731.